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WOOD, HERRON & EVANS, LLP
2700 CAREW TOWER
441 VINE STREET
CINCINNATI, OH 45202

EXAMINER
TANENBAUM, TZVI SAMUEL

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KENAN SOENMEZ, MARKUS KERBER, and VOLKER BRAKHAN

Appeal 2015-001436
Application 12/992,745
Technology Center 3700

Before: CHARLES N. GREENHUT, MICHAEL L. HOELTER, and ANNETTE R. REIMERS, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from the Final Rejection of claims 13, 14, 16–19, and 22–24. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

THE CLAIMED SUBJECT MATTER

The claims are directed to a chilled aircraft passenger service device. Sole independent claim 13, reproduced below, is illustrative of the claimed subject matter:

> 13. An aircraft passenger service device for receiving goods for cold storage that are to be supplied to aircraft passengers, the passenger service device comprising:
>
> a receiving device which includes a viewing apparatus, a coolant inlet for feeding a coolant into the receiving device, and a coolant outlet for discharging the coolant from the receiving device, wherein the viewing apparatus is designed to enable a user to inspect goods stored in the receiving device before they are removed from the receiving device, and
>
> a cooling arrangement which includes:
>
> a coolant circuit line connected to the coolant inlet and the coolant outlet of the receiving device, the coolant circuit line circulating the coolant to and from the receiving device,
>
> a device that directs into the coolant circuit line a refrigerant fluid flowing through a refrigerant fluid circuit line of a central cooling system of the aircraft, thereby mixing the refrigerant fluid and the coolant, and
>
> a control device that controls at least one of the temperature and the temperature distribution within the receiving device,

> wherein the control device includes a bypass line positioned to feed heated-up coolant discharged from the receiving device via the coolant outlet of the receiving device, into the coolant circuit line at a rejoining location downstream of the device that directs into the coolant circuit line the refrigerant fluid flowing through the refrigerant fluid circuit line and upstream of the coolant inlet of the receiving device.

REFERENCES

Kull et al. (hereinafter "Kull")	US 5,491,979	Feb. 20, 1996
Buck	US 6,845,627 B1	Jan. 25, 2005
Moran et al. (hereinafter "Moran")	US 7,444,830 B2	Nov. 4, 2008
Sato et al. (hereinafter "Sato")	US 2006/0196634 A1	Sept. 7, 2006
Scherer et al. (hereinafter "Scherer")	US 2008/0134703 A1	June 12, 2008

REJECTIONS

Claims 13, 14, 16, 19, and 22–24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Scherer, Moran, and Sato. Final Act. 7.

Claim 17 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Scherer, Moran, Sato, and Buck. *Id.* at 16.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Scherer, Moran, Sato, and Kull. *Id.* at 17.

ANALYSIS

Claims 13, 14, 16, 19, and 22–24—Obviousness—Scherer, Moran, and Sato

The Examiner finds that, as regarding sole independent claim 13, Scherer teaches the claimed "*aircraft passenger service device* 16 *for*

receiving goods for cold storage that are to be supplied to aircraft passengers," including the claimed "*receiving device* 44" with a coolant inlet and coolant outlet, a "*cooling arrangement*" that includes "*a coolant circuit line* 42, 50" connected to the receiving device's coolant inlet and the coolant outlet, and a "*control device*" that includes "*bypass line* 28." Final Act. 7–8 (citing Scherer ¶ 25; reference numbers refer to Scherer's sole Figure).

The Examiner acknowledges that Scherer does not teach, *inter alia*, (1) "*a device that directs into the coolant circuit line* 42, 50 *a refrigerant fluid flowing through a refrigerant fluid circuit line* 22 *of a central cooling system* 18 *of the aircraft, thereby mixing the refrigerant fluid and the coolant*" (*id.* at 10); and (2) a bypass line that is "*positioned to feed heated-up coolant discharged from the receiving device* 44 *via the coolant outlet of the receiving device* 44, *into the coolant circuit line* 42, 50 *at a rejoining location downstream of the device that directs* [refrigerant into the coolant circuit line] *and upstream of the coolant inlet of the receiving device*." Final Act. 10–11. For these limitations, the Examiner relies on Sato. *Id.*

The Examiner contends that Sato's valve 8, "which is configured to switch a coolant route between heat exchanger route and a bypass route," allows a user "to direct the route of a fluid or to inhibit the flow of a fluid." *Id.* at 10. According to the Examiner, a person of ordinary skill in the art would "modify Scherer by Sato such that Scherer includes *a device* [valve] 8" with the motivation being to allow "a user to direct or inhibit the flow of refrigerant flowing though circuit line 22 into coolant circuit line 42, 50." *Id.* at 10. According to the Examiner, claim 13 "is merely a combination of old elements, and in the combination each element would merely have

performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable." *Id.*

For the limitation specifying the positioning of the bypass line, the Examiner asserts that "Sato teaches that heated coolant (i.e. coolant exiting unit 2) may be directed to bypass (via bypass pipe 7) a cooling system (i.e. heat exchanger 4) and return to the heat-emitting unit (i.e. vehicle unit 2) to prevent the cooling system from being damaged due to thermal shock []." Final Act. 11 (citing Sato ¶¶ 34, 36, 50). The Examiner contends that it would have been obvious to one of ordinary skill in the art "to modify Scherer by Sato" such that Scherer's bypass line 28 is repositioned to feed heated-up coolant discharged from receiving device 44 into coolant circuit line 42, 50 at a "rejoining location" downstream of valve 8 and upstream of the coolant inlet of the receiving device 44, for the purpose of "preventing thermal shock in any of the components of the cooling system 18, and also controlling the temperature and flow . . . of coolant into receiving device 44." Final Act. 13. The Examiner further contends, "rearranging the bypass line 28 of Scherer in view of Sato involves only routine skill in the art." *Id.*

Appellants dispute that a person of ordinary skill in the art would have been motivated to modify Scherer in view of Sato, as the Examiner contends. According to Appellants, none of the Examiner's reasons for such modification "explain why one of ordinary skill would modify the already existing bypass line 28 . . . in the circuit of *Scherer* . . . with the teachings of *Sato*." App. Br. 7. Appellants assert, "there is no record evidence that thermal shock is even a realistic problem for cooling chambers which contain food and drinks." *Id.* at 8. As for controlling the coolant's

temperature and flow rate, Appellants contend that Scherer "already provides at least five options for such control," and that there is no record evidence that any of these options "is deficient in any respect." *Id.* at 9 (*referencing* Scherer ¶¶ 27–29). The Examiner responds that "[t]he combination of Scherer and Sato would have resulted in an advantageous or beneficial result of further controlling the temperature and flow amount of coolant into the receiving device of Scherer" without explaining why the current multitude of controls are deficient such that even more control might be warranted. Ans. 14.

We are not persuaded that a person of ordinary skill in the art would have repositioned Scherer's line 28 based on Sato's teachings, as the Examiner asserts. Furthermore, regarding the Examiner's thermal-shock rationale, the Examiner misreads Sato. Sato does not teach that bypass pipe 7 is used to prevent thermal shock to heat exchanger 4. Instead, thermal shock is avoided by limiting the speed at which three-way valve 8 is opened to permit coolant to flow to heat exchanger 4; i.e., if the difference between the temperature of the coolant discharging from vehicle unit 2 and the temperature of the coolant at the heat exchanger is larger than a particular set point, the three-way valve opens to permit coolant to flow through the radiator at a slower rate that it would otherwise. Sato ¶¶ 45–47, Fig. 2. Conversely, coolant flows through Sato's bypass pipe 7 only when the coolant outlet temperature is too low to require cooling from the heat exchanger. *Id.* ¶ 42.

As for controlling the coolant temperature and flowrate, Scherer's system already is designed to do that, as Appellants point out. *See* App. Br. 9. The Examiner has not provided evidence or persuasive reasoning that a

skilled artisan would have recognized any potential benefit in repositioning bypass line 28 for this purpose. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1075 (Fed. Cir. 2015) (Stating that it does not "suffice for obviousness that a variation of the prior art would predictably work, but requires consideration of whether, in light of factors such as design incentives and other market forces, the hypothetical skilled artisan would recognize the potential benefits and pursue the variation.") (citations and quotation marks omitted). Accordingly, we do not sustain the Examiner's rejection of claim 13, as well as dependent claims 14, 16, 19, and 22–24, as unpatentable over Scherer, Moran, and Sato.

Obviousness over Scherer, Moran, Sato, and either of Buck or Kull

Claims 17 and 18 depend from claim 13. App. Br. 20 (Claims Appx.). Neither Buck nor Kull is relied upon to cure the defects noted above with respect to the combined teachings of Scherer and Sato. *See* Final Act. 16–18. Accordingly, we do not sustain these rejections.

DECISION

For the above reasons, the Examiner's rejection of claims 13, 14, 16–19, and 22–24 is reversed.

REVERSED